Pesticide Use Report

Annual 1995

Indexed by Chemical

State of California
Environmental Protection Agency
DEPARTMENT OF PESTICIDE REGULATION
Information Systems Branch
1020 N Street
Sacramento, CA 95814

California Environmental Protection Agency
DEPARTMENT OF PESTICIDE REGULATION
Information Systems Branch

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Department of Pesticide Regulation

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I. Order Form

In order to continue to make the Annual California Pesticide Use Reports and the Pesticide Registration Number Book available, it is necessary to charge for the costs of reproduction and mailing. The cost of each printed Pesticide Use Report is $10.00 and $2.50 for each report on disk. The Registration Number Book is $7.50 in the printed format and $2.50 on disk.

The annual pesticide use reports are available in two formats. One annual report is indexed by chemical and lists the amount of each pesticide used, the commodity on which it is used, the number of applications, and the acres/units treated. The second report is indexed by commodity and lists the chemicals used, the number of applications, amount of pesticides used, and the acreas/units treated.

Beginning with the 1993 reports, the Annual California Pesticide Use Reports indexed by chemical or commodity are available on floppy disk in WordPerfect 6.0a or ASCII format.

Please use this form to order reports and enclose payment to Cashier, State of California, Department of Pesticide Regulation, 1020 N Street, Sacramento, California 95814-5624.

CALIFORNIA PESTICIDE USE REPORT AND REGISTRATION NUMBER BOOK ORDER FORM

Item No.	Report	Quantity	Amount	Total
603	Annual Report by Commodity 19__ (printed)	_____	$10.00	_____
604	Annual Report by Chemical 19__ (printed)	_____	$10.00	_____
605	Annual Report by Commodity **or** Chemical 19__ (disk) - please circle one	_____	$ 2.50	_____
606	Registration Number Book (printed)	_____	$ 7.50	_____
607	Registration Number Book (disk)	_____	$ 2.50	_____
TOTAL				$_____

Enclose payment to: Cashier, State of California
Department of Pesticide Regulation
1020 N Street
Sacramento, California 95814-5624

NAME_____COMPANY_____

PHONE ( )_____ ADDRESS_____

CITY_____ STATE_____ ZIP_____

II. Terminology

The following terminology is used in this report:

Number of applications	Number of applications of an active ingredient
Pounds applied	Number of pounds of an active ingredient
Unit type	The amount listed in this column is one of the following: A = Acreage C = Cubic feet K = Thousand cubic feet (of commodity treated) P = Pounds S = Square feet T = Tons (of commodity treated) U = Miscellaneous units (e.g., number of tractors, trees, bins, etc.)

Questions regarding the 1995 Pesticide Use Report or information regarding the availability and cost of the computerized database should be directed to:

Department of Pesticide Regulation
Information Systems Branch
1020 N Street, Room 322
Sacramento, California 95814-5624
Telephone (916) 445-4110

III. Introduction

This 1995 Summary of Pesticide Use Report Data represents the sixth year under which all agricultural pesticide uses are required to be reported under legislation implemented in 1990. The legislation mandated that data collected under full use reporting are to be used in "setting priorities for food monitoring, pesticide use enforcement, farm worker safety programs, environmental monitoring, pest control research, public health monitoring and research, and similar activities by the Department of Pesticide Regulation (DPR), or by the Department in cooperation with other state, regional, or local agencies." (For further information about the PUR, see the Appendix.)

Full use reporting greatly expanded the scope and complexity of data collected by DPR. Unfortunately, it also exposed some shortcomings in the data collection and reporting processes which have been resolved. This section provides a discussion of issues addressed by DPR in its ongoing evaluation of the program. It is especially important to note these changes when comparing data from the first year to succeeding years.

This report is intended to be used as a statistical tool to provide data to address a wide range of questions. However, this summary document represents a fraction of the total data gathered under full use reporting. Detailed, individual use report data (which can be obtained through DPR) can provide a much more accurate and complete picture for in-depth analytical purposes.

In 1995, DPR contracted with 56 county agricultural commissioners for the electronic submittal of pesticide use data. They accounted for approximately 97 percent of the total pesticide usage in the State. As the number of counties participating in this program has increased, quality of the pesticide use data has continued to improve.

The following comments and points should be taken into consideration when analyzing data contained in this report:

1. DPR's computer uses a database of pesticide product labels to cross-check data entries to determine if the product reported used is registered on the reported commodity. The DPR label database uses a coding system which is based on crop names used by U.S. EPA to prepare official label language. However, this coding system caused some problems until it was modified in 1990/91.

   Problems occurred when the label language in the database called a crop by one name, and the use report used another. For example, a grower may have reported a pesticide use on "almonds," but the actual label on the pesticide product--coded into

the database--stated the pesticide was to be used on "nuts." This causes use data for certain commodities to be listed under more than one category. DPR continues to work on simplification of the crop/commodity codes to achieve a more consistent structure without loss of information in the future reports.

The commodity coding structure also causes some inaccuracies because of confusion among growers. For example, the coding structure differentiates between tomatoes grown for processing and those grown for fresh market use. However, pesticide labels do not make the differentiation, and neither did most growers when filing pesticide use reports. Although there are two categories of tomatoes listed in this report--"tomato" and "tomato, for processing/canning"--they should be added together and considered a single classification for determining pesticide usage on tomatoes.

The commodity "grapes, processed" was renamed "grapes, wine" beginning with 1992 Pesticide Use Reports. This change was made to differentiate grapes grown for wine production from all other categories of grapes including table grapes, raisins, grape juice, etc.

2. The report contains several entries which report the use of a pesticide on a commodity for which the pesticide is not registered. This sometimes occurs because the original use report was in error--either the pesticide or the commodity was inaccurately reported. DPR is continuing to implement methods to identify and reduce these types of reporting errors in the future reports.

   Other instances may occur because by law growers are sometimes allowed to use stock they have on hand of a pesticide product that has been withdrawn from the market by the manufacturer or suspended or canceled by regulatory authorities.

   Other reporting "errors" may occur when a pesticide is applied directly to a site to control a particular pest, but is not applied directly to the crop in the field. A grower may use an herbicide to treat weeds on the edge of a field, a fumigant on bare soil prior to planting, or a rodenticide to treat rodent burrows. For example, reporting the use of the herbicide glyphosate on tomatoes--when it was actually applied to bare soil prior to planting the tomatoes--could be perceived to be an error. Although technically incorrect, recording the data as if the application were made directly to the commodity provides valuable crop history information in DPR's risk assessment program.

3. Data on spray adjuvants (including emulsifiers, wetting agents, foam suppressants, and other efficacy enhancers) and petroleum products, not summarized prior to full use reporting, are now included in the annual report. Examples of these types of chemicals include the "alkyls" and petroleum distillates. (Adjuvants are exempt from federal registration requirements, but must be registered as pesticides in California.)

4. There are a few entries in this report in which the total pounds applied for certain active ingredients are displayed as zero. This is because the chemical (active ingredient) made up a very small percentage of the formulated product that was used. When these products are applied in extremely low quantities and taking into account that the calculations are rounded to four decimal places, the resulting value of the active ingredient is too low to register an amount.

5. As noted in this report, the information generated under full use reporting provides real-world usage data that will make possible more accurate assessments of dietary exposure to pesticides. This is because the use report data make it possible to calculate the percentage of acreage of a commodity that is treated with a specific active ingredient. This information is combined with residue data from DPR's priority pesticide monitoring program, in which only crops known to have been treated with targeted pesticides are sampled and tested for pesticide residue.

   While it is possible to use the detailed, computerized use report database to determine the acreage of a commodity treated with a single active ingredient, the summary information in this annual report cannot be used to determine the total number of acres of a crop to which pesticides were applied sometime during the year. Frequently, there are situations when a single pesticide application is recorded more than once in the database. This occurs when the product reported used contains more than one active ingredient. (In any pesticide product, the active ingredient is the component which kills, or otherwise controls, target pests; a pesticide product is made up of one or more active ingredients, as well as one or more inert ingredients.) For example, if a 20-acre field is treated with a product that contains three different pesticide active ingredients, a use report is filed by the farmer correctly recording the application of a single pesticide product to 20 acres. However, the computer database notes that there are three active ingredients in the product and registers a use for each one. Therefore, each active ingredient is entered as if it were a separate pesticide product applied to 20 acres. This results in a total of 60 acres recorded as being treated instead of the 20 acres actually treated.

Data Summary

In 1995, there were 211,798,752 pounds of pesticide active ingredients reported used in California. The total number of reported chemical applications in 1995 (3,679,530) increased by approximately 200,000 from those reported in 1994 (3,471,308). Annual use has varied from year to year since full use reporting was implemented in 1990. Reported pesticide use was approximately 182 million pounds in 1990, 161 million pounds in 1991, 192 million pounds in 1992, 200 million pounds in 1993, and 199 million pounds in 1994. Such variances are and will continue to be a normal occurrence. These fluctuations can be attributed to a variety of factors including changes in planted acreage, crop plantings, pest pressures, and ever-changing weather conditions. For example, extremely heavy rains result in excessive weeds, thus more pesticides may be used; and drought conditions may result in fewer planted acres, thus less pesticides may be used.

Data for pounds of pesticide active ingredients used from 1992-1995 break down into the following general use categories:

	Pounds Reported Used			
Category	**1992**	**1993**	**1994**	**1995**
Production agriculture	167,148,634	184,826,555	183,443,578	192,471,136
Postharvest commodity treatment	3,099,293	3,010,490	3,769,741	5,626,171
Structural fumigation	5,314,816	4,679,106	5,178,177	6,170,938
Landscape maintenance	1,242,013	1,311,734	1,322,459	1,380,030
All others[1]	15,079,699	6,618,242	5,781,235	6,150,477
	191,884,455	200,446,127	199,495,190	211,798,752

Data for pounds of pesticide active ingredients sold in California in 1995 are unavailable at this printing. There were 627.9 million pounds of pesticide active ingredients sold in California in 1994; 661.7 million pounds in 1993; 589.1 million pounds in 1992; and 553.6 million pounds in 1991. (Typically, about two-thirds of the pesticide active ingredients sold in a given year are not agricultural and therefore their use is not reportable.)

In addition, it should be noted that the pounds of pesticides used and the number of applications are not necessarily accurate indicators of the extent of pesticide use or, conversely, the extent of use of reduced-risk pest management methods. For example, farmers may make a number of small-scale "spot" applications targeted at problem areas rather than one treatment of a large area. They may replace a more toxic pesticide used at one pound per acre with a less hazardous compound that must be applied at multiple pounds per acre. Either of these scenarios could increase the number of

[1] Included in "All Others" are pesticide applications reported in the following general categories: weed control on rights-of-way; public health which includes mosquito abatement work; vertebrate pest control; fumigation of nonfood and nonfeed materials, such as lumber, furniture, etc.; pesticides used in research; and regulatory pest control used in ongoing control and/or eradication of pest infestations.

applications and amount of pounds used without indicating an increased reliance on pesticides. This report is a summary of data submitted to DPR, and in-depth analysis of pesticide use and trends is beyond its scope.

IV. Appendix

About the Pesticide Use Report

Limited reporting of agricultural pesticide use has been in force in California since at least the 1950s. Beginning in 1970, anyone who used restricted materials was required to file a pesticide use report with the county agricultural commissioner.

The criteria established to designate a pesticide as a restricted material include hazard to public health, farm workers, domestic animals, honeybees, the environment, wildlife, or other crops. Restricted materials, with certain exceptions, may be possessed or used only by or under the supervision of licensed or certified persons and only in accordance with an annual permit issued by the county agricultural commissioner.

In addition, the State required commercial pest control operators (those in the business of applying pesticides, such as crop dusters, structural fumigators, and professional gardeners) to report all pesticides used, whether restricted or nonrestricted. These reports had to include the pesticide applied, when and where the application was made, and the crop involved if the application was in agriculture. The reports were entered into a computerized database and summarized by chemical and crop in annual reports.

With implementation of full use reporting in 1990, **all** agricultural pesticide use must be reported monthly to the commissioner who, in turn, reports the data to DPR. The reports must include the specific site where the pesticide was applied, and detail the kind and amount of pesticides used. If the pesticide is applied to a crop, the type of commodity must be specified.

California has a broad legal definition of "agricultural use" so the use reporting requirements include pesticide applications to parks, golf courses, cemeteries, rangeland, pastures, and along roadside and railroad rights-of-way. In addition, all postharvest pesticide treatments of agricultural commodities must be reported along with all pesticide treatments in poultry and fish production as well as some livestock applications. The primary exceptions to the use reporting requirements are home and garden use and most industrial and institutional uses.

Structural fumigators, professional gardeners, and other nonagricultural pest control operators had to report all pesticide use under the earlier regulations, and these requirements remain unchanged.

The expansion of use reporting was primarily undertaken in response to concerns by many individuals and groups including government officials, scientists, farmers, legislators, and public interest groups. It was generally acknowledged that more accurate information about pesticide use would provide a better base for evaluating pesticide impacts and making regulatory decisions. For example, the system for estimating dietary exposure to pesticide

residues did not provide sufficient data on which to make realistic assessments; this often resulted in mischaracterization of risk.

There are several key areas in which data generated by full use reporting are proving beneficial:

Risk Assessment -- Without information on actual pesticide use, regulatory agencies must assume all planted crop acreage is treated with many pesticides even though most crops are treated with just a few chemicals. If the assumptions used by regulatory agencies are incorrect, regulators could make judgments that are overly conservative by several orders of magnitude. There is a significant cost to society in overestimates of risk. The use report data, on the other hand, provides actual use data so DPR can better assess risk and make more realistic risk management decisions.

Worker Health and Safety -- Under the reporting regulations, pest control operators must give farmers a written notice after every pesticide application that includes the date and time the application was completed and the re-entry and preharvest intervals (respectively, the intervals between the time a pesticide is applied and when workers may enter the field, and the time of application and when a commodity can be harvested). This notice gives the farmer accurate information to help keep workers from entering fields prematurely and also lets the farmer know the earliest date a commodity can be harvested.

Farmers are required to post signs at fields treated with certain pesticides. The signs must include information on pesticide use including when it is safe for workers to re-enter the treated area. Farmers must also make records of pesticide use available to workers. Use reports help fulfill these requirements.

DPR's Worker Health and Safety Branch uses the data when doing exposure assessments--a part of the overall risk characterization process. Use reporting data helps scientists determine typical application rates and the number and times a year pesticides are used.

Endangered Species -- DPR is working with the county agricultural commissioners to combine site-specific data with data on locations of endangered species and computer-based geographic information. The resulting database helps commissioners resolve potential pesticide use conflicts with endangered species. DPR and the commissioners can also examine patterns of pesticide use near habitats to determine the potential impact of proposed use limitations. Location-specific data on pesticide use brings precision to the evaluation of the possible impact of pesticides on endangered species so that restrictions can be targeted only where they are needed to protect fish and wildlife.

Environment -- The following are examples of how the pesticide use report data is used for monitoring and planning and, in retrospect, for investigating environmental issues:

1. In meeting the requirements of the Pesticide Contamination Prevention Act of 1985, site-specific records help track pesticide use in areas that are susceptible to ground water contamination. These records also provide data to help researchers determine why certain soil types are more prone to ground water contamination.

   By using pesticide use data, determination can be made whether a contaminated well is directly related to agricultural practices.

   In 1983, DPR began a program to reduce contamination of surface water by rice pesticides. With full pesticide use reporting, specific agricultural practices can be pinpointed. This assists DPR in making recommendations on alternate pest control practices that protect surface water while ensuring pest control needs are met.

2. The federal Clean Air Act requires states to develop plans for reducing the emissions of volatile organic compounds, or VOCs, from all chemicals including pesticide products. VOCs help form smog which is harmful to both human health and vegetation. Accurate data on the amount of VOCs produced by pesticides is critical to developing measures that target restrictions on the highest VOC-emitting pesticides; and, therefore, do not unnecessarily hurt business, industry, and agriculture. Without a state plan, the federal government could use arbitrary assumptions of the smog-contributing potential of pesticides to impose unnecessary restrictions on pesticide use. DPR worked with the state Air Resources Board and the United States Environmental Protection Agency (U.S. EPA) to develop a plan based on the actual VOC emissions from pesticide products. This was made possible, in part, by accurate use data from full use reporting.

3. In evaluating requests for special local need pesticide registrations or exemptions from registration to respond to emergency pest problems, both the pesticide use and label databases can be used, taking into account the commodity and site of application, to assess potential environmental impact.

Processor and Retailer Requirements -- Food processors, produce packers, and retailers often require farmers to submit a complete history of pesticide use on their crops. DPR's use reporting form includes a section which can provide the information needed to fulfill these requirements.